

REMARKS

Claims 1 - 37, 39 - 40, 42 - 47, 49 - 54, 56, 58 - 68 and 70 are still pending in the present application.

**I. THE INDEFINITENESS REJECTION**

In paragraph 2 of the Office Action, claims 22-31, 39, 40, 42 and 70 are rejected under 35 U.S.C. 112, second paragraph.

Claim 22 is amended to provide a proper antecedent basis for all elements recited therein.

For all these reasons, it is respectfully submitted that the indefiniteness rejection be reconsidered and withdrawn.

**II. THE ANTICIPATION REJECTIONS**

In paragraphs 4-5 of the Office Action, claims 1-6, 8-9, 11-12, 15, 28, 32 - 34, 36, 43-45, 47, 58 - 62, 64, 66-68 are rejected under 35 U.S.C. 102(b) as being anticipated by Li (U.S. Patent 5,841,918).

Claims 1-6, 8-9, 11-12, 15

Claim 1 is amended to recite an optical filter featuring a second optical element that provides an optical filter signal having a desired effective filter function with a desired amplitude profile that is different from amplitude profiles of first and second reflective filter functions of first and second optical elements, the desired effective filter function being

very difficult or substantially impossible to produce by a single grating.

There is support for this limitation in the patent application, page 9, lines 19-25.

Moreover, Figures 5-7 show examples of combining Guassian and ramp amplitude profiles to provide a desired signal having a combined Guassian/ramp grating amplitude profile in Figure 5, or combining a Guassian and rectangular amplitude profiles to provide a desired signal having a combined Guassian/rectangular amplitude profile in Figures 6-7. The desired Guassian/ramp and Guassian/rectangular amplitude profiles have different amplitude profiles than either filter function profile of the two gratings used to provide the same. It is respectfully submitted that a person skilled in the art would appreciate that the combined Guassian/ramp and Guassian/rectangular amplitude profiles would be very difficult or substantially impossible to produce by a single grating.

In comparison, Li discloses an optical system having a tuning element 18 with a reflection profile shown in Figure 2a, and a tuning element 20 with a transmission profile shown in Figure 2b, each having a respective amplitude profile. The combined reflection and transmission profiles result in a desired optical signal having a filter function shown in Figure 2c. In comparison, it is respectfully submitted that a person skilled in the art would appreciate that the filter function shown in Figure

2c would not be very difficult or substantially impossible to produce by a single grating.

In effect, it is respectfully submitted that Li merely discloses a demultiplexer optical device and does not teach or suggest taking two optical elements having different grating amplitude profiles and using them to provide a desired effective filter function having a different amplitude than the optical signals being used to produce the same, and that is very difficult or substantially impossible to produce by a single grating, or why one or ordinary skilled in the art would desire or be motivated to modify that disclosed in Li to do the same.

Dependent claims 2-6, 8-9, 11-12, 15 depend directly or indirectly from claim 1, contain all the limitations therein, and are deemed patentable for the reasons discussed above.

Claims 32 - 34, 36, 43-45, 47, 58 - 62, 64, 66-68

For reasons similar to that discussed above in relation to claims 1, it is respectfully submitted that independent method claims 32 and 58 are deemed patentable over that disclosed in Li.

Dependent claims 33-34, 36, 43-45, 47, 59 - 62, 64, 66-68 depend directly or indirectly from claim 32, contain all the limitations therein, and are deemed patentable for the reasons discussed above.

Claims 58 - 62, 67 and 68

Moreover, for reasons similar to that discussed above in relation to independent claim 22, it is respectfully submitted that independent claim 58 is deemed patentable over that disclosed in Li, because Li does not teach that the center wavelengths of the filter functions are substantially aligned, as claimed herein.

### **III. THE OBVIOUSNESS REJECTIONS**

In paragraphs 6-12 of the Office Action, independent claims 22 and 37 and the remaining dependent claims are rejected under 35 U.S.C. 103 as being obvious over Li (U.S. Patent 5,841,918) in view of one or more other cited references.

The remaining claims depend directly or indirectly from independent claims 22 or 37 or one of the aforementioned claims and contains all the limitations therein. Independent claim 37 and the remaining claims are patentable over Li for all the reasons discussed above. It is respectfully submitted that the one or more other cited references do not make up for the deficiency in that disclosed in Li in relation to that discussed above.

Claims 22, 28-30, 32 - 34, 36, 39, 42-44

Moreover, independent claim 22 also recites that the tunable

optical filter features first and second reflection wavelengths that are approximately aligned to reflect a portion of the aligned wavelength bands to a output port.

In contrast, in Li device the optical signals are not substantially aligned. Moreover, it is respectfully submitted that Li's teaches away from aligning first and second reflection wavelengths to reflect a portion of the aligned wavelength bands to a output port. Moreover, it is respectfully submitted that Li does not teach a dual core waveguide, as claimed.

Dependent claims 28-30, 32 - 34, 36, 39 and 42-44 depend from claim 22, contain all the limitations therein, and are deemed patentable for the reasons discussed above.

#### IV. CONCLUSION

Reconsideration and early allowance of the claims is respectfully requested.

Respectfully submitted,



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